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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/975,382
Filing Date: October 10, 2001
Appellant(s): VAN DER VLEUTEN ET AL.

Robert M. McDermott
Reg. No. 41,508
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed Aug. 10, 2007 appealing from the Office action mailed March 19, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Park (US Patent No. 6,148,288 – Apr. 2, 1998)

Nishiwaki et al (US Patent No. 5,892,848 – Mar. 20, 1997)

Simon et al (US Patent No. 4,918,523 – Oct. 5, 1987)

Shin et al (US Patent No. 6,493,387 – Apr. 10, 2000)

Girod et al (US Patent No. 5,809,139 -- Sep. 13, 1996)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3, 5-7, 9-11, 13-16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (US Patent No. 6,148,288) in view of Nishiwaki et al (US Patent No. 5,892,848) and in view of Simon et al (US Patent No. 4,918,523).

As per claim 1, Park teaches:

coding the object to obtain a bit-stream having multiple coded parts [Fig. 2, 3, col. 3 lines 24-47, col. 4 lines 18-32], generating quality information (i.e. side information) which indicates distortion of the object [Fig. 3 col. 3 lines 44-47], and adding quality information, such that the quality information is situated throughout the bit-stream [Fig. 3, col. 4 lines 22-32].

Park teaches the side information, which includes quantization bit information (i.e. the quality information which indicates distortion of the object) [col. 3 lines 44-46] and the quantization bit information allotted to each band in the bitstream [col. 4 lines 45-47].

Nishiwaki teaches headers and data parts [Fig. 6B] and the headers include the quality information (e.g. quantization bit) [col. 6 lines 46-51].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nishiwaki with Park, since one would have been motivated to arrange the data for transmitting and storing in the case of a large amount of digital data [Nishiwaki, col. 1 lines 7-8].

Park teaches generating the side information, which includes quantization bit information (i.e. the quality information which indicates distortion of the object) [col. 3 lines 44-46] and the side information is utilized during the decoding process [col. 4 lines 45-54]. Park doesn't expressively mention the quantization information (i.e. quality information) is associated with the bitstream truncation during the decoding.

However, Simon teaches the quantization information, included into the header portion of the bitstream [Fig. 44, col. 20 lines 32-35], is associated with splitting and decoding the various regions of the coded objects in the bitstream [Fig. 44, 45, 46, col. 20 lines 32-44, col. 32 lines 7-14, 27-35, various quantization-bits information as shown in fig. 44, is utilized to truncate the amount of the bits from the bitstream during the decoding process, Fig. 59, 60].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Simon with Park and Nishiwaki, since one would have been motivated to control the magnitude of bitstreams and the complexity of a decoder [Park, col. 3 lines 19-20].

As per claim 2, the rejection of claim 1 is incorporated and Park teaches:

the coding step is a scalable coding step to obtain a scalable bit-stream [col. 3 lines 17-20].

As per claim 3, the rejection of claim 1 is incorporated and Park teaches:

the quality information relates to an object reproduction quality [col. 14 lines 26-28].

As per claim 5, the rejection of claim 1 is incorporated and Park teaches:

the quality information is in the form of quality tags (i.e. side information), which are added at given locations in the bit-stream [Fig. 3, col. 10 lines 7-15, 17-20].

Park doesn't expressively mention the quantization information (i.e. quality information) is associated with the bitstream truncation during the decoding.

However, Simon teaches the quantization information [Fig. 44, col. 20 lines 32-35], is associated with splitting and decoding the various regions of the coded objects in the bitstream [Fig. 44, 45, 46, col. 20 lines 32-44, col. 32 lines 7-14, 27-35, various

quantization-bits information as shown in fig. 44, is utilized to truncate the amount of the bits from the bitstream during the decoding process].

<u>As per claim 6</u>, the rejection of claim 1 is incorporated and further Park teaches:

the quality information is incorporated in existing fields of a given scalable coding standard [Fig. 3].

<u>As per claim 7</u>, the rejection of claim 2 is incorporated and further Park teaches:

the scalable bit-stream includes several layers and wherein respective layers include respective quality information (i.e. side information) [Fig. 3].

<u>As per claim 9</u>, Park teaches:

receiving the at least one bit-stream [Fig. 4], extracting the quality information from the coded parts of the bit-stream[Fig. 4 col. 13 lines 21-27],

Park teaches obtaining the desired bitrate and distortion (i.e. to obtain the original magnitudes of the signal represented in the bitstream) by adjusting the quantization information [col. 4 lines 50-55]; providing the at least one bit-stream at the desired combination of bit-rate and distortion [Fig. 4, col. 13 lines 27-32] and processing the at least one bit-stream in consideration of the quality information obtained from the coded parts of the bit-stream [Fig. 4, col. 13 lines 35-38, 53-60].

Nishiwaki teaches headers and data parts [Fig. 6B] and the headers include the quality information (e.g. quantization bit) [col. 6 lines 46-51].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nishiwaki with Park, since one would have been motivated to arrange the data for transmitting and storing in the case of a large amount of digital data [Nishiwaki, col. 1 lines 7-8].

Park doesn't expressively mention truncating the bitstream.

However, Simon teaches the quantization information, included into the header portion of the bitstream [Fig. 44, col. 20 lines 32-35], is associated with splitting and decoding the various regions of the coded objects in the bitstream to obtain the desired quality [Fig. 44, 45, 46, col. 20 lines 32-44, col. 32 lines 7-14, 27-35, Fig. 59, 60, various quantization-bits information is utilized to truncate the amount of the bits from the bitstream to obtain the desired bit-rate and distortion (quality)].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Simon with Park and Nishiwaki, since one would have been motivated to control the magnitude of bitstreams and the complexity of a decoder [Park, col. 3 lines 19-20].

<u>As per claim 10</u>, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above. Further, Park

teaches transmitting the bit-stream in which the quality information has been added [col. 14 lines 5-13].

As per claim 11, it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above. Further, Park teaches decoding the at least one bit-stream at the desired combination of bit-rate and distortion [Fig. 4, col. 13 lines 35-38, 53-60].

As per claim 13, it is a device claim corresponds to method claim 1 and is rejected for the same reason set forth in the rejection of claim 1 above.

As per claim 14, the rejection of claim 13 is incorporated and further Park teaches: a transmitter comprising a device as claimed in claim 13 [Fig. 2].

As per claim 15, it is a device claim corresponds to method claim 9 and is rejected for the same reason set forth in the rejection of claim 9 above.

As per claim 16, the rejection of claim 15 is incorporated and further Park teaches: a receiver comprising a controller as claimed in claim 15 [Fig. 4].

<u>As per claim 18</u>, the rejection of claim 15 is incorporated and it encompasses limitations that are similar to limitations of claim 16. Thus, it is rejected with the same rationale applied against claim 16 above.

<u>As per claim 19</u>, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

2. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (US Patent No. 6,148,288) in view of Nishiwaki et al (US Patent No. 5,892,848).

<u>As per claim 12</u>, Park teaches:

extracting the quality information from the coded parts of the bit-stream [Fig. 4 col. 13 lines 21-27], decoding the bit-stream to obtained a decoded multi-media object [Fig. 4, col. 13 lines 35-38, 53-60]; processing the multi-media object in dependence on the extracted quality information obtained from the one or more coded parts of the bit-stream whereby the processed multi-media object is reproducible by the reproduction unit [Fig. 4, col. 13 lines 21-29, 35-38, 53-60].

Park teaches obtaining the desired bitrate and distortion (i.e. to obtain the original magnitudes of the signal represented in the bitstream) by adjusting the quantization information [col. 4 lines 50-55]; providing the at least one bit-stream at the desired combination of bit-rate and distortion [Fig. 4, col. 13 lines 27-32] and processing the at

least one bit-stream in consideration of the quality information obtained from the coded parts of the bit-stream [Fig. 4, col. 13 lines 35-38, 53-60]. Park doesn't expressively mention the quality information *from the headers* of the coded parts.

Nishiwaki teaches headers and data parts [Fig. 6B] and the headers include the quality information (e.g. quantization bit) [col. 6 lines 46-51].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nishiwaki with Park, since one would have been motivated to arrange the data for transmitting and storing in the case of a large amount of digital data [Nishiwaki, col. 1 lines 7-8].

<u>As per claim 17</u>, it is a device claim corresponds to method claim 12 and is rejected for the same reason set forth in the rejection of claim 12 above.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (US Patent No. 6,148,288) in view of Nishiwaki et al (US Patent No. 5,892,848) and in view of Simon et al (US Patent No. 4,918,523) and in view of Girod et al (US Patent No. 5,809,139).

<u>As per claim 8</u>, the rejection of claim 1 is incorporated and Park and Nishiwaki don't expressively mention that the bitstream is encrypted and the quality information is unencrypted.

However, Girod teaches the bit-stream is encrypted and the quality information is unencrypted [*col. 5 lines 25-39* "The signal input to the digital watermarking apparatus is divided into its separate components, those being the DCT coefficients for the prediction error portion of the signal (or for intraframe coded data), the motion vectors (if any), and the header/side information of the bitstream. The header/side information (i.e. quality information) is simply passed through to the output of the watermarking apparatus 26 (i.e. unencrypted). The prediction error signal, however, is modified to embed a watermark (i.e. encrypted). The prediction error data is the portion of the bitstream (i.e. bitstream) in which the watermark data is embedded" *col. 3 lines 1-4* "In one alternative embodiment of the invention, an encryption system is used in conjunction with the watermarking device, such that the signal is watermarked and encrypted prior to being transmitted to the receiver"].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teaching of Girod into the teaching of Park, Nishiwaki and Simon to encrypt (i.e. watermark) the datastream. The modification would be obvious because one of ordinary skill in the art would be motivated to achieve copyright protection with the addition of a watermark to the video signal and secure transmission [Girod, *col. 1 lines 16-17*].

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (US Patent No. 6,148,288) in view of Nishiwaki et al (US Patent No. 5,892,848) and in

view of Simon et al (US Patent No. 4,918,523) and in view of Shin et al (US Patent No. 6,493,387).

As per claim 4, the rejection of claim 3 is incorporated and park teaches the side information (i.e. quality information) [Fig. 3].

Shin teaches:

the quality information is based on a signal to noise ratio value [Fig. 2 SNR scalable architecture col.1 lines 52-54 "SNR (signal to noise ratio) scalable coding function, which can variably determine picture quality in a predetermined space"].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Shin with Park, Nishiwaki and Simon, since one would have been motivated to provide coding/decoding function, which determine object quality in predetermined space [Shin, col. 1 lines 51-54].

(10) Response to Argument

Appellant's arguments filed Aug. 10, 2007 have been fully considered but they are not persuasive.

Regarding to Appellant's argument to claims 1, 10, 13-14, 19, that neither Park, nor Nishiwaki, nor Simon, individually or collectively, reaches or suggest "*generating quality information which indicates distortion of the object* when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream". Examiner disagrees with Appellant for the above argument since Park's invention provides a scalable audio coding/decoding, which controls the magnitude of bitstreams and the complexity of a decoder, according to the state of transmission channel, the performance of the decoder or a user's request, by representing data for bitrates of various layers in a bitstream. As shown in Fig. 2, the scalable audio coding apparatus includes a quantizer (230) and a bit packing portion (240). The time/frequency mapping portion converts the input audio signals of temporal domain into signals of frequency domain. The psychoacoustic portion couples the frequency signals by appropriate subbands to obtain a masking threshold. The quantizing portion performs scala quantization so that the magnitude of the quantization noise of each quantization band is smaller than the masking threshold. If quantization fulfilling such conditions is performed, quantization step size values for the respective bands and quantized frequency values are generated [col. 6 lines 10-43, col. 7 lines 1-11]. Thus, the quantization process inherently introduces the claimed "distortion". That is, the quantization information (the quantization bit/quantization step size) indicates the noise ratio (distortion) presented in the coded part of the bit-stream. The bit packing portion performs coding on side information having at least quantization step size information and quantization bit information allotted to each band as show in Fig. 3 [col. 6 lines 44-

49, col. 3 lines 44-47]. Therefore, by generating the quantization step size and bit information (side information), which is based on/related to quantization noise, and adding the quantization step size and bit information for all layers as shown in Fig. 3, Park teaches the claim limitation "generating quality information which indicates distortion of the object...and adding the quality information of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream". Further, Park discloses a decoding apparatus for decoding bitstreams generated by the coding apparatus as shown in Fig. 4. The bitstream analyzing portion decodes side information having at least quantization bits and quantization step size for respective layers. The inverse quantizing portion restores the decoded quantization step size and quantized data into signals having the original magnitudes. The frequency/time mapping portion converts inversely quantized signal into signals of temporal domain so as to be reproduced by a user [col. 13 lines 21-32, 53-60]. Therefore, by utilizing the quantization bits and step size for respective layers during the decoding process as taught by Park discloses the claim limitation ".... when the bit-stream is decoding in relation to the data parts of the coded parts of the bit-stream". Niskiwaki's invention relates to a data arranging for recording or transferring data, which can allow both low-class and high-class machines to easily perform a reproduction process. Fig. 6A and 6B illustrate the arrangement of pack. Each pack includes a packet, wherein the pack header and the packet header describe information necessary to reproduce audio data, such as quantization bits [col. 6 lines 46-52]. Further, Niskiwaki discloses various data sizes, as shown Fig. 8, for mono, stereo and multi channel modes. Each group shows

the data sizes for the respective number of quantization bits. Therefore, Niskiwaki teaches the claim limitation "adding the quality information (quantization bits information) into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream. Simon's invention relates to systems for reducing the amount of digital data required to represent a digital data and for formatting a compressed digital data to facilitate transmission, recording and reproduction of the compressed digital data. Simon teaches the quantization information, included into the header portion of the bitstream [Fig. 44, col. 20 lines 32-35], is associated with splitting and decoding the various regions of the coded objects in the bitstream (i.e. various quantization-bits information as shown in fig. 44, is utilized to truncate the amount of the bits from the bitstream during the decoding process) [Fig. 44, 45, 46, col. 20 lines 32-44, col. 32 lines 7-14, 27-35, Fig. 59, 60]. Therefore, Simon teaches that the quality information (quantization information) is associated with the bitstream truncation during the decoding. In this case, the combination of Park, Nishiwaki and Simon teaches the claim subject matter.

Regarding to Appellant's argument that the combination of Park, Nishiwaki and Simon fails to identify any apparent reason that one of skill in the art would consider attempting to combine these reference. Examiner recognizes that obviousness can only be established by combining or modifying the teaching of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to on of ordinary skill in the art. See *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir.

1988) and *In re Jones*, 958 F.2d 347, 21 USPQ 2nd 1941 (Fed. Cir 1992). It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with the applicant was concerned, in order to be relied upon as basis for rejection of the claimed invention. See *In re Ortiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the combination Park, Nishiwaki and Simon teach the claim subject matter. The combination is sufficient as one of ordinary skill in the art at the time the invention was made, since one would have been motivated to arrange the data for transmitting and storing in the case of a large amount of digital data [Nishiwaki, col. 1 lines 7-8], which can be record multi-channel signal of high quality and allow both low-class and high class machine to easily perform a reproduction process, and control the magnitude of bitstreams and the complexity of a decoder [Park, col. 3 lines 19-20], by representing data for bitrates of various layers in a bitstream.

Regarding to Appellant's argument to claims 9, 11, 15, since Park's discloses a decoding apparatus for decoding bitstreams generated by the coding apparatus as shown in Fig. 4. The bitstream analyzing portion decodes side information having at least quantization bits and quantization step size for respective layers. The inverse quantizing portion restores the decoded quantization step size and quantized data into signals having the original magnitudes. The frequency/time mapping portion converts inversely quantized signal into signals of temporal domain so as to be reproduced by a user. Therefore, by utilizing the quantization bits and step size for respective layers during the decoding process as taught by Park discloses the claim limitation "....

extracting the quality information from the bitstream". Nishiwaki discloses the packet header which contains the quality information (quantization information) as shown in Fig. 6B and the decoder as shown in Figs. 17-20, which utilizes the extracted information. Simon teaches the quantization information, included into the header portion of the bitstream [Fig. 44, col. 20 lines 32-35], is associated with splitting and decoding the various regions of the coded objects in the bitstream to obtain the desired quality [Fig. 44, 45, 46, col. 20 lines 32-44, col. 32 lines 7-14, 27-35, Fig. 59, 60, various quantization-bits information is utilized to truncate the amount of the bits from the bitstream to obtain the desired bit-rate and distortion (quality)]. Therefore, the combination of Park, Nishiwaki and Simon teaches the claim subject matter.

Regarding to Appellant's argument to claims 12, 17, Examiner disagree with Appellant's argument, since as discussed in regarding to claim 1 above, Park teaches the claim limitation "the quality information indicating distortion of the object.......", and therefore, the combination of Park and Nishiwaki teaches the claim subject matter.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Patel Nirav/

Patel Nirav

Patent Examiner, GAU 2135

Nov. 7, 07

GILBERTO BARRON Jr
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Conferees:

Gilberto Barron

SPE 2132

Matthew Smithers

/Matthew Smithers/
Primary Examiner, GAU 2137